IN THE CLAIMS:

1-15. (Cancelled)

16. (Amended) A method of forming a transparent multi-layer coating over a substrate comprising:

forming an organo-silicon polymer surface-hardening layer over said substrate;

forming a multi-layer abrasion-resistant coating over said organo-silicone polymer surface-hardening layer by sequentially depositing a plurality of alternating layers of silicon dioxide and zirconium dioxide of respectively different thicknesses over said organo-silicone polymer surface-hardening layer using a dry coating technique; and

depositing a transparent perfluorinated hydrophobic coating over said abrasion-resistant coating using a dry coating technique.

17. (Amended) The method of claim 16, wherein said abrasion-resistant coating and said transparent perfluorinated hydrophobic coating are dry coatings which are formed by a vacuum deposition technique.

18. (Original) The method of claim 16, wherein said abrasion-resistant coating is formed to sequentially comprise a silicon dioxide layer, a zirconium dioxide layer, a silicon dioxide layer, a zirconium dioxide layer, and a silicon dioxide layer.

19. (Original) The method of claim 18, wherein said abrasion-resistant coating is formed to sequentially comprise a silicon dioxide layer of approximately 907 angstrom, a zirconium dioxide layer of approximately 765 angstrom, a silicon dioxide layer of approximately

174 angstrom, a zirconium dioxide layer of approximately 246 angstrom, and a silicon dioxide layer of approximately 2616 angstrom.

20. (Amended) The method of claim 16, wherein said transparent perfluorinated hydrophobic coating comprises perfluoroalkylsilane.

21. (Original) The method of claim 20, wherein said perfluoroalkylsilane coating is formed to have a thickness of approximately 5-20 nm.

22. (Amended) The method of claim 16, wherein said transparent perfluorinated hydrophobic coating and said abrasion-resistant coating have substantially equal thermal coefficients of expansion.

23. (Cancelled)

24. (Amended) The method of claim ~~23~~ 16, wherein organo-silicon polymer material is triethoxymethyl silane.

25. (Amended) The method of claim ~~23~~ 16, wherein said organo-silicon layer is formed to have a thickness of approximately 2-3 microns.

26. (Previously Presented) The method of claim 16, wherein said coating is formed on a glass substrate.

27. (Previously Presented) The method of claim 16, wherein said coating is formed on a polymer-based substrate.

28-29. (Cancelled)

30. (Amended) A method of forming a transparent multi-layer coating over a transparent plastic substrate to provide abrasion-resistant and hydrophobic properties comprising the steps of;

providing a transparent plastic substrate;

forming an organo-silicon tie-bond layer on the plastic substrate;

forming a multi-layer abrasion-resistant coating of alternating layers of silicon dioxide and zirconium dioxide over the tie-layer wherein a thickness of a first layer adjacent the tie-layer is larger than each respective subsequent layer; and

depositing a transparent perfluorinated hydrophobic coating over the abrasion-resistant coating with a dry coating technique wherein the thicknesses of each layer and corresponding thermal coefficients of expansion cooperate to match a thermal coefficient of expansion of the plastic substrate over an operative predetermined thermal range.

31. (Amended) The method of claim 30 wherein the transparent perfluorinated hydrophobic coating is perfluoroalkylsilane.

32. (Previously Presented) The method of claim 31 wherein the tie-bond layer is a triethoxymethyl silane.

33. (Previously Presented) The method of claim 30 wherein the thickness of each alternating layer of the abrasion-resistant coating is different.

34. (Previously Presented) The method of claim 33 wherein the sum of the combined thicknesses of the silicon dioxide layers are at least three times greater than the sum of the combined thicknesses of the zirconium dioxide layers.

35. (Previously Presented) The method of claim 30 wherein a thickness of an outside layer of the abrasion-resistant coating is larger than any intermediate layer after the first layer.

36. (Previously Presented) A method of forming a transparent multi-layer coating over a transparent plastic substrate to provide abrasion-resistant and hydrophobic properties comprising the steps of:

providing a transparent plastic substrate from one of polycarbonate and acrylic;

forming an organo-silicon tie-bond layer on the plastic substrate;

forming a multi-layer abrasion-resistant coating of alternating layers of silicon dioxide and zirconium dioxide over the tie-bond layer wherein a thickness of a first layer adjacent the tie-bond layer is larger than each respective subsequent layer; and

depositing a perfluoroalkylsilane coating over the multi-layer abrasion-resistant coating of sufficient thickness to make the plastic substrate hydrophobic, wherein the thicknesses of each layer and corresponding thermal coefficients of expansion cooperate to match a thermal coefficient of expansion of the plastic substrate over an operative predetermined thermal range.

37. (Previously Presented) The method of claim 36 wherein the tie-bond layer is triethoxymethyl silane.

38. (Previously Presented) The method of claim 37 wherein the thickness of each alternating layer of the abrasion-resistant coating is different.

39. (Previously Presented) The method of claim 38 wherein the sum of the combined thicknesses of the silicon dioxide layers is at least three times greater than the sum of the combined thickness of the zirconium dioxide layers.

40. (Previously Presented) The method of claim 39 where a thickness of an outside layer of the abrasion-resistant coating is larger than any intermediate layer after the first layer.